

REMARKS

With entry of the amendment, claims 1-13, 17-19 and 21-35 are pending. Claims 1, 3, 4, 6, 8, 10, 17-18, 21, 23, 24-26, 28, 30 and 34 have been amended and claim 35 has been added, leaving claims 2, 5, 7, 9, 11-13, 19, 22, 27, 29 and 31-33 unchanged. Claims 14-16 and 20 were canceled in an earlier Amendment.

In view of the arguments below, Applicants respectfully request allowance of claims 1-13, 17-19 and 21-35.

CLAIM REJECTIONS UNDER 35 U.S.C. §112

On page 3 of the Office Action, claims 25 and 26 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention. Claim 25 is hereby amended to remove the “x, y, z controller” term from claim 25, and to instead claim a z controller. Claim 26 is also hereby amended to remove the “x, y, z controller” term from claim 26. Accordingly, withdrawal of the 35 U.S.C. §112 rejections of claims 25 and 26 is respectfully requested.

CLAIM REJECTIONS UNDER 35 U.S.C. §§ 102 and 103 over Overbeck et al.

On pages 4-10 of the Office Action, claims 1-2, 7-8, 10, 12, 17, 21-22, 27-28, 30 and 32 are rejected under 35 U.S.C. §102(e) as being anticipated by Overbeck et al. (United States Patent Application Publication Number 2002/0083998), and claims 3-6, 9, 11, 13, 18-19, 23-26, 29, 31, 33 and 34 are rejected under §103(a) as being unpatentable over Overbeck et al. in view of Mirkin et al. (United States Patent Number 6,635,311) and Hong et al. (Science, 9 June 2000, 288: 1808-1811).

Independent claims 1, 17 and 21

Claim 1 is hereby amended and calls for, among other things:

“...an X, Y controller coupled to the base, wherein the X, Y controller is selectively positionable in an X-Y plane independently of movement of the Z controller, the X, Y controller further comprising a deposition substrate coupled thereto and wherein the movement of the X, Y controller moves the deposition substrate between a first position and a second position, the second position being located under the deposition probe...” (Amendment marks not shown).

Claim 17 is hereby amended and calls for, among other things:

“...an X, Y controller coupled to the Z controller and movable independently of the Z controller; and

a deposition substrate coupled to the X, Y controller where the deposition substrate is selectively movable between a first position and a second position and wherein when the X, Y controller moves the deposition substrate to the second position the deposition substrate is positioned under the tip.” (Amendment marks not shown).

Claim 21 is hereby amended and calls for, among other things:

“...an X, Y controller coupled to the base wherein the X, Y controller is selectively positionable along the X axis, and the Y axis independently of the X, Y translation stage, the X, Y controller further comprising a deposition substrate coupled thereto and wherein the movement of the X, Y controller moves the deposition substrate between a first position and a second position, the second position being located under the deposition probe.” (Amendment marks not shown).

As discussed with the Examiner during the telephone interview with the undersigned Applicant's Representative on October 5, 2004, and as shown in FIGS. 11 and 11A and described in paragraphs 192-198 of Overbeck, Overbeck teaches a device for depositing fluid dots in an array that includes a mobile reservoir MW movable by an X, Y stage. A pin assembly PA picks up a small amount of material from MW and deposits it upon a substrate

R. Overbeck teaches repeated motion of PA and MW relative to one another to allow repetition of material pick-up. As shown in FIGS. 11 and 11A of Overbeck, linear motor #1 and linear motor #2 are movable in a first direction ("x1") relative to an X stage 62. PA is driven by linear motor #1, and is movable along rail support 60 in a y direction ("y1") independently of MW, which is driven by linear motor #2 as shown by reference to "y2". MW is also movable in the x direction ("x2") independently of PA. PA is also movable in a z direction relative to MW and R. Overbeck, however, fails to teach, describe or suggest moving R in any of the directions mentioned above (x1, y1, x2, y2 or z). That is, as discussed during the interview on October 5, 2004, R is not coupled to an X, Y controller movable as claimed in claims 1, 17 and 21.

Specifically, Overbeck fails to teach, describe or suggest, among other things, "an X, Y controller ...the X, Y controller further comprising a deposition substrate coupled thereto and wherein the movement of the X, Y controller moves the deposition substrate between a first position and a second position, the second position being located under the deposition probe," as claimed in amended claim 1, "an X, Y controller...[and] a deposition substrate coupled to the X, Y controller where the deposition substrate is selectively movable between a first position and a second position and wherein when the X, Y controller moves the deposition substrate to the second position the deposition substrate is positioned under the tip," as claimed in amended claim 17, or "an X, Y controller...the X, Y controller further comprising a deposition substrate coupled thereto and wherein the movement of the X, Y controller moves the deposition substrate between a first position and a second position, the second position being located under the deposition probe," as claimed in amended claim 21.

Even if Overbeck did disclose an apparatus for creating an array and having an X, Y controller coupled to and operable to move a deposition substrate to and from a location under any part of a deposition probe (and the Applicant respectfully submits that it does not), Overbeck also fails to teach, describe, or suggest such an apparatus in which the X, Y controller is positionable or movable independently of movement of the Z controller or independently of an X, Y translation stage as also claimed in amended claims 1, 17, and 21. Clearly, such capability can provide enhanced functionality of an arraying apparatus, enabling greater relative and independent movement of arrayer components in generating arrays.

In light of the above remarks, withdrawal of the 35 U.S.C. §102(e) rejections of claims 1, 17 and 21 is respectfully requested.

Dependent claims 2-13, 18-19 and 22-33

Claims 3, 6, 8, 18, 23 and 28 are hereby amended to more clearly define that which the Applicant regards as the invention, and in light of the amendments made to claims 1, 17 and 21 (from which each of claims 3, 6, 8, 18, 23 and 28 ultimately depend).

Claims 2-13, 18-19 and 22-33 are each ultimately dependent upon amended claims 1, 17 and 21, respectively, and are therefore allowable based upon amended claims 1, 17 and 21, and upon other features and elements claimed in claims 2-13, 18-19 and 22-33 but not discussed herein.

Independent claim 34

Claim 34 is hereby amended and calls for, among other things:

“...an X, Y controller coupled to the base and movable in the X and Y directions independently with respect to the X, Y translation stage;

a deposition substrate coupled to the X, Y controller where the deposition substrate is selectively movable by the X, Y controller into a position under the deposition probe; and

a humidity controller, the humidity controller selectively adjusting the humidity around the deposition probe, the X, Y translation stage, and the X, Y controller.” (Amendment marks not shown).

As described above and discussed during the telephone interview with the undersigned Applicant's Representative on October 5, 2004, Overbeck fails to teach, describe or suggest an “X, Y controller...[and] a deposition substrate coupled to the X, Y controller where the deposition substrate is selectively movable by the X, Y controller into a position under the deposition probe,” as claimed in amended claim 34.

Mirkin and Hong have been cited to show that the use of a humidity controller (also claimed in amended claim 34) and force feedback monitor was known at the time of the

invention. However, Mirkin and Hong both fail to cure the deficiencies of Overbeck in teaching an “X, Y controller...[and] a deposition substrate coupled to the X, Y controller where the deposition substrate is selectively movable by the X, Y controller into a position under the deposition substrate,” as claimed in amended claim 34. Also, Overbeck, Mirkin, Hong, and their combined teachings also fail to disclose or suggest an apparatus for creating an array having such features and in which the X, Y controller coupled to the deposition substrate is movable in the X and Y directions independently with respect to an X, Y translation stage coupled to a loading substrate. As discussed above, such capability can provide enhanced functionality of an arraying apparatus, enabling greater relative and independent movement of arrayer components in generating arrays.

In light of the above remarks, withdrawal of the 35 U.S.C. §103(a) rejection of claim 34 is respectfully requested.

CLAIM REJECTIONS UNDER 35 U.S.C. §§ 102 and 103 over Aksyuk et al.

On pages 3 and 4 of the Office Action, claim 17 is rejected under 35 U.S.C. §102(e) as being anticipated by Aksyuk et al. Also, on pages 6 and 7 of the Office Action, claim 18 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Aksyuk et al. (United States Patent Number 5,963,367 in view of Hong. Furthermore, on pages 6-8 of the Office Action, claim 19 is rejected under 35 U.S.C. §103(a) as being unpatentable over Aksyuk in view of Hong and further in view of Mirkin.

Independent claim 17

Claim 17 is hereby amended and calls for, among other things:

“... a Z controller selectively positionable along a Z axis;
a deposition probe removably coupled to the Z controller, the deposition probe further comprising a tip, the deposition probe selectively positionable along the Z axis by movement of the Z controller;
an X, Y controller coupled to the Z controller and movable independently of the Z controller” (Amendment marks not shown).

As discussed with the Examiner during the telephone interview with the undersigned Applicant's Representative on October 5, 2004, Aksyuk teaches an xy stage 4 having a sample stage 12 (see FIG. 1) that can be driven by x-drive means 20 and y-drive means 40 to position the sample stage 12 in an x-y plane. Aksyuk, col. 2, lines 50-58. Aksyuk further teaches an xyz stage 2 (see FIG. 4) which is formed by adding a z-drive means to the xy stage 4. The z-drive means generates an electrostatic force that moves the sample stage 12 out of the x-y plane. However, as discussed in the interview on October 5, 2004, Aksyuk fails to teach, describe or suggest "a deposition probe removably coupled to the Z controller...the deposition probe selectively positionable along the Z axis by movement of the Z controller," as claimed in claim 17. On the contrary, Aksyuk teaches a z-drive means that controls movement of a stage out of an x-y plane.

Even if Aksyuk did disclose an apparatus for creating an array and having a deposition probe removably coupled to and positionable along a Z axis by a Z controller as claimed in amended claim 17 (and the Applicant respectfully submits that it does not), Aksyuk also fails to teach, describe, or suggest such an apparatus in which the X, Y controller is movable independently of the Z controller as also claimed in amended claim 17. As discussed above with respect to Overbeck, such capability can clearly provide enhanced functionality of an arraying apparatus, enabling greater relative and independent movement of arrayer components in generating arrays.

In light of the above remarks, withdrawal of the 35 U.S.C. §102(e) rejection of claim 34 is respectfully requested.

Dependent claims 18 and 19

Claims 18 and 19 are each dependent upon amended claim 17, and are therefore allowable based upon amended claim 17, and upon other features and elements claimed in claims 18 and 19 but not discussed herein.

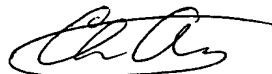
NEW CLAIM

Claim 35 is hereby added to further claim that which the Applicant regards as the invention. Claim 35 is patentable over Overbeck, Aksyuk and the other cited references. Accordingly, the Applicant respectfully requests allowance of claim 35.

CONCLUSION

In view of the amendments and remarks presented herein, it is respectfully submitted that the claims as amended are in condition for allowance. The Applicant requests that the Examiner telephone the attorneys of record in the event a telephone discussion would be helpful in advancing the prosecution of the present application.

Respectfully submitted,



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